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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,356	06/23/2003	Sang-Hag Lee	SEC.1059	7099
20987	7590	01/25/2006	EXAMINER	
VOLENTINE FRANCOS, & WHITT PLLC ONE FREEDOM SQUARE 11951 FREEDOM DRIVE SUITE 1260 RESTON, VA 20190			MOORE, KARLA A	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/600,356

Applicant(s)

LEE, SANG-HAG

Examiner

Karla Moore

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,347,918 to Blahnik in view of U.S. Patent No. 5,626,324 to Nakamura et al.
3. Blahnik discloses semiconductor manufacturing equipment in Figures 4-8 substantially as claimed and comprising: a plurality of interconnected chambers including a load-lock chamber (87,89), and at least one process chamber (95,97,99,101) in which a wafer is to be processed; adjacent ones of said chambers having a pair of mutually opposing gate walls (column 1, column 4, rows 31-54) defining first and second doorways extending therethrough, respectively, such that doorways each lead into respective one of the chambers of said pair, the doorways each being sized to admit a semiconductor wafer therethrough; a gate (see Figure 5, 49a-f; column 4, rows 33-34) interposed between said pair of adjacent ones of said chambers and by which the chambers of said pair are connected at their mutually opposing gate walls, said gate constituting an open passageway (Figure 5, 49) along which a wafer is transferred between the chambers of said pair, and said gate defining doorways (Figure 5, 57 and 59) that lead into a respective one of the chambers of said pair, the doorways each being sized to admit a semiconductor wafer therethrough; and a gate valve (11b9, 11b10, 11b11, 11b12) disposed in said gate, said gate valve comprising a plurality of doors (Figures 4 and 6, 21b and 23b), and a driving unit (column 4, rows 55-64) operative to concurrently position said doors over said doorways, respectively, and thereby establish a plurality of discrete seals between the pair of chambers connected by the gate.
4. However, Blahnik fails to teach a plurality of bars inclined relative to the vertical and connecting said doors and driving unit, wherein said driving unit is operative to concurrently position said doors over

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said doorways, respectively, by raising the doors via said bars that are inclined relative to the vertical, and wherein said driving unit is operative to angle said doors away from said gate walls and thereby uncover said doorways by lowering the doors via said bars.

5. Nakamura et al. teach the use of a bar (Figures 1-4, 9) capable of linear and tilting (inclining) movement connected to a valve body (8) for closing a valve opening for the purpose of providing a valving mechanism that creates a minimized number of particles and thus greatly reduces cost. The valving mechanism is further provided as such for the purpose of performing opening and closing operations at high speed. See (column 3, row 61 through column 4, row 7).

6. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided the valve body of Blahnik connected to a bar capable of linear and tilting motion in order to provide a valving mechanism that creates a minimized number of particles and thus greatly reduces cost and also performs opening and closing operations at high speed as taught by Nakamura et al.

7. With regards to the recitation of a plurality of bars, Examiner notes that the courts have ruled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). In the instance case, whether one or a plurality of bars were provided to effect movement would not provide a new and unexpected result. Movement of the valve body/door would proceed similarly to if there were only one as disclosed in the prior art.

8. Examiner realizes that in Nakamura et al. the valve body is disposed at a lower end of the bar. However, one of ordinary skill in the art would recognize that the placement could be reversed and instead of lowering the valve body to close the valve opening, the valve body could also be lowered to open a valve opening, as is clearly taught in Blahnik.

9. With respect to claim 2, said driving unit comprises a fluid-actuated cylinder that is reciprocable in a vertical direction (column 3, rows 63-67).

10. With respect to claim 3, said gate adjoins said process chamber (see Figures 4-8).

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11. With respect to claim 4, said plurality of chambers include a transfer chamber (81) interposed between said load-lock chamber and said at least one process chamber, said transfer chamber having an internal space constituting said passageway, and comprising a robot (85) operative to transfer a wafer along said passageway from said load-lock chamber to said at least one process chamber.

12. With respect to claim 5, said gate adjoins said transfer chamber and one of said process chambers (see Figure 8).

### ***Response to Arguments***

13. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection. New prior art (Nakamura et al.) is relied upon for addressing the newly added limitations drawn to the plurality of bars for lifting, lowering and angling the gate doors.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karla Moore  
Patent Examiner  
Art Unit 1763  
19 January 2006